

ABSTRACT

An improved plating system comprises a plurality of non-electrically conductive shields forming an elongated upper channel and an elongated lower channel, the upper and lower channels each having a width less than or equal to one inch; a plurality of part holding
5 clamps electrically coupled to a power source and positioned within the upper channel or the lower channel; a plating solution sparger comprising a series of inlets oriented to direct any plating solution flowing through the inlets into the lower channel and towards the upper channel; and a plurality of anodes positioned outside and along the length of the upper and lower channels. An improved method of plating a work piece comprises: submerging a work
10 piece to be plated in a volume of plating solution; positioning a work piece to be plated at least partially within an upper plating channel and a lower plating channel, the upper and lower plating channels comprising non electrically conductive sides, the channels being positioned opposite each other and being separated from each other, the separation between the channels forming a pair of solution egress slots positioned approximately over the center
15 of the work piece to be plated; causing electrical current to flow between the work piece and one or more anodes, the current flow passing through the solution egress slots; and moving the work piece to be plated along the length of the plating channels to form one or more internal heat spreaders on a surface of the work piece which is essentially parallel to the shields.